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10/688,802	10/16/2003	Phillip A. Hetherington	11336/592 (P03131USP)	9753

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EXAMINER
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ABEBE, DANIEL DEMELASH

ART UNIT	PAPER NUMBER
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2626

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/688,802	<b>Applicant(s)</b> HETHERINGTON ET AL.	
	<b>Examiner</b> Daniel D. Abebe	<b>Art Unit</b> 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-23 is/are allowed.
- 6) ☒ Claim(s) 1-15, 24, 25 and 27-37 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                       |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

The indicated allowability of claims 2-8, 10, 14-15 and 33 is withdrawn in view of the newly discovered reference(s) to Elko (2003/014738). Rejections based on the newly cited reference(s) follow.

some of the claims are also rejected under 101 after further consideration.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-10, 12, 14-15 and 28-37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 28-37 recite computer readable medium having software for performing the recited steps.

However, according to the specification the computer readable medium includes non statutory subject matter.

The specification on Par.0056 it reads

“ A "computer-readable medium," "machine-readable medium," "propagated-signal" medium, and/or "signal-bearing medium" may comprise any means that contains, stores, communicates, propagates, or transports software for use by or in connection with an instruction executable system, apparatus, or device. The machine-readable medium may selectively be, but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or propagation medium. A non-exhaustive list of examples of a machine-readable medium would include: an electrical connection "electronic" having one or more wires, a portable

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magnetic or optical disk, a volatile memory such as a Random Access Memory "RAM" (electronic), a Read-Only Memory "ROM" (electronic), an Erasable Programmable Read-Only Memory (EPROM or Flash memory) (electronic), or an optical fiber (optical). A machine-readable medium may also include a tangible medium upon which software is printed, as the software may be electronically stored as an image or in another format (e.g., through an optical scan), then compiled, and/or interpreted or otherwise processed. The processed medium may then be stored in a computer and/or machine memory."

Thus reading claims 28-37 in light of the specification, the recited computer readable medium encompasses a signal that conveys/propagates the software.

The claims are rejected because signals are not patentable as they do not fall into one of the four categories of patentable subject matter under 35 USC 101.

With respect to claim 1 the specification states that the "voice enhancement logic may encompass hardware or software", see paragraph 0029 and 0064.

Reading the claimed system in claim 1 in light of this statement the recited logics for detecting and attenuating wind noise encompass a software only embodiment that is non statutory.

Claims 2-10, 12 and 14-15 are rejected for same reasons.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-15, 24-25, and 27-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Elko (2003/0147538).

As to claim 1, Elko teaches a system for identifying, modeling and attenuating a wind noise comprising the steps of:

a noise detector that detects and models/estimates a wind induced noise signal coming from two different sources by analyzing the mean of the wind noise; and

a noise attenuator electrically connected to the noise detector to reduce the wind noise from the input signal (Par.0006;0054; 0062-0065; Figs.2-3, 7).

as to claim 2, Elko teaches where the noise detector estimates a power of a portion of the input signal and a noise power estimate (Par.0044).

as to claim 3 Elko teaches where the noise detector is configured to detecting a noise to power ratio (Par.0057).

as to claim 6, the step of limiting the attenuation when harmonic like signals are detected is inherent in Elko teaching as harmonic signals mainly represent voice.

As to claim 7, Elko doesn't teach where updating is conducted once the signal is declared noise (Par.0063).

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As to claims 5 and 8, Elko teaches where the power difference ratio in each sub-band is compared to a threshold and utilized in detecting wind noise and determining there is a wind noise in the signal when the value is below the threshold suggesting that if the ratio value exceeds the threshold it is a speech period and no noise updating will be performed (Par.0105).

As to claim 9, Elko teaches where other acoustic noise is also removed from the audio signal (Par.0067).

As to claim 11, Elko teaches a microphone for generating electrical signal from audio (Fig.1).

As to claim 12, the step of pre-processing the signal is inherent in Elko teaching in order to filter signals that are deemed to be below the desired signal frequency.

As to claim 13, Elko teaches two microphone and configured to exploit signals that arrive at the two microphones that are closely spaced (Par.0006).

As to claim 14, Elko teaches where the microphone with greatest power is selected (Claim 26).

As to claim 15, Elko teaches where the system may comprise two or more noise sensors to significantly reduce wind noise (Par.0115).

As to claims 24 and 27, Elko teaches attenuating wind noise; comprising;

Converting a signal into frequency domain;

Estimating noise power;

Correlating the signals by comparing the lines; and

Attenuating the wind noise based on the correlation result (Par.0044; 0065; 0074-0075; Figs.2-3).

As to claim 25, Elko teaches where a transient period represents a speech signal inherently suggesting noise is not estimated during this period (Par.0052).

As to Claims 28-37, the corresponding computer readable medium having the software instructions to perform the steps as recited in the method claims is analogous to the claims addressed above and therefore rejected by Elko for the foregoing reasons.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elko as applied above, and further in view of Mauro (6,122,384).

As to claim 4, Mauro teaches a system and method for suppressing noise including wind noise where the method includes calculating a y-intercept (Fig.3) and this feature would be obvious in Elko system for the purpose efficiently controlling the noise suppression in accordance to the noise level detected.

### ***Allowable Subject Matter***

Claims 16- 23 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

claims 16-23 are allowed because the prior arts of record do not teach a memory comprising wind buffet line fitting rules and a wind noise detector to fit a line to a portion of an input signal and apply the wind buffet line fitting rules to the line to obtain a constrained line adhering to the wind buffet line fitting rules and the wind attenuator as recited in the claims.

Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ozawa "automatic wind noise reduction" (2005/0238183)

Coney et al. "adaptive wind noise reduction" (6,859,420)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Abebe whose telephone number is 571-272-7615. The examiner can normally be reached on monday-friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel D Abebe/  
Primary Examiner, Art Unit 2626